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**CAN WE ADDRESS ORBITAL DEBRIS WITH THE
INTERNATIONAL LAW WE ALREADY HAVE? AN
EXAMINATION OF TREATY INTERPRETATION AND
THE DUE REGARD PRINCIPLE**

JOHN S. GOEHRING*

ABSTRACT

India's controversial anti-satellite test in 2019 provides the United States an opportunity to demonstrate leadership in preventing future debris-generating events. However, new international space laws or norms are unlikely. Instead, the United States could look to the international space law already in place, particularly the due regard principle contained within Article IX of the 1967 Outer Space Treaty (Article IX). Ignored throughout its history, Article IX's due regard principle has untapped potential. States, through their practice in the application of treaties, can shape the interpretation of treaty provisions in order to accommodate changing circumstances. The United States has experience in applying this approach to the space domain, having established practices to shape interpretations of the legal concepts of peaceful purposes and non-appropriation. If the United States seeks to lead an international effort to address the threat of orbital debris, then the due regard principle presents a possible tool well worth considering. This Article examines the potential of the due regard principle, the possibility of establishing a functional meaning, and some considerations involved in pursuing such a course of action.

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I. INTRODUCTION

ON MARCH 27, 2019, INDIA conducted a kinetic anti-satellite (ASAT) test against its own orbiting satellite, asserting its place as a “global space power.”¹ The test initially created over 400 pieces of debris in low Earth orbit (LEO).² By design, the test impacted a target at a relatively low altitude of under 300 kilometers (under 180 miles) in order to avoid long-lasting orbital debris.³ Simulations conducted prior to the test indicated all the debris would deorbit within forty-five days.⁴ However, of the 101 catalogued pieces of trackable debris, over forty pieces remained in orbit nearly three months later.⁵ By the end of 2019, eighteen pieces still remained.⁶ At least a dozen pieces of debris were launched into orbits over 1,000 kilometers (over 621 miles) in altitude, with one piece reaching 2,222 kilometers (about 1,380 miles) in altitude.⁷

¹ William Harwood, *India's Anti-Satellite Weapon Test Sent Debris Flying That Could Threaten Space Station, NASA Chief Warns*, CBS NEWS (Apr. 2, 2019, 9:57 AM), <https://www.cbsnews.com/news/india-anti-satellite-weapon-test-debris-could-threaten-international-space-station-nasa-warns/> [https://perma.cc/6PVU-HDLC].

² *Id.*

³ *Id.* (“[T]he test . . . had been conducted to intercept a satellite at about 280 kilometers.”); The Wire Staff, *DRDO Defends ‘Shakti’ Test as Experts Say Indian ASAT Debris ‘Threatens All LEO Sats,’* THE WIRE (June 4, 2019), <https://thewire.in/space/drdo-defends-shakti-test-as-experts-say-indian-asat-debris-threatens-all-leo-sats> [https://perma.cc/UEY3-YGFD].

⁴ Sanjeev Miglani, *India Says Space Debris From Anti-Satellite Test to ‘Vanish’ in 45 Days*, REUTERS (Mar. 28, 2019, 6:52 AM), <https://www.reuters.com/article/us-india-satellite/india-says-space-debris-from-anti-satellite-test-to-vanish-in-45-days-idUSKCN1R91DM> [https://perma.cc/D4YQ-UKHG].

⁵ Adam Forrest, *Debris From Satellite Blown Up By India Still Flying Around Earth, Six Weeks After Delhi Claimed It Should Have Decayed*, THE INDEPENDENT (June 26, 2019, 11:35 AM), <https://www.independent.co.uk/news/science/india-satellite-debris-space-junk-missile-test-nasa-earth-orbit-a8975231.html> [https://perma.cc/CM3U-ADS5] (forty-one out of 101 pieces of debris over six weeks later); NASA Orbital Debris Program Office, *Two Breakup Events Reported*, 23 NASA ORBITAL DEBRIS Q, NEWS 1, 1 (Aug. 2019), <https://orbitaldebris.jsc.nasa.gov/quarterly-news/pdfs/odqnv14i3.pdf> [https://perma.cc/K5YF-447E] (forty-nine out of 101 pieces of debris as of July 15, 2019).

⁶ Jonathan McDowell (@planet4589), TWITTER (Dec. 27, 2019, 10:54 PM), <https://twitter.com/planet4589/status/1210786046943739904> [https://perma.cc/DQU5-FKGA].

⁷ Caleb Henry, *India ASAT Debris Spotted Above 2,200 Kilometers, Will Remain a Year or More In Orbit*, SPACE NEWS (Apr. 9, 2019), <https://spacenews.com/india-asat-debris-spotted-above-2200-kilometers-will-last-a-year-or-more/> [https://perma.cc/Q8MY-4PHS].

The Indian ASAT test presents an opportunity for the United States to show leadership in an international effort to prevent future debris-generating events in space. The U.S. Department of State did not publicly express alarm over India's test; a spokesperson stated, "Now, the issue of space debris, that is an important concern for the United States, and I would say that we took note of the Indian Government's statements that the test was designed to address space debris issues."⁸ However, other responses within the government signaled disapproval and, perhaps, a willingness to discuss solutions to the problem of deliberate creation of orbital debris. Patrick Shanahan, then the Acting Secretary of Defense, said, "I think not having rules of engagement is worrisome. . . . I would expect anyone who tests does not put at risk anyone else's assets."⁹ General John Hyten, then the commander of U.S. Strategic Command and now the Vice Chairman of the Joint Chiefs of Staff, responded, "[A]ll debris is bad, and I hope for the day when we have norms of behavior, and I think the place to start is with debris-creating events."¹⁰ National Aeronautics and Space Administration (NASA) Administrator Jim Bridenstine said after the test that it "is a terrible, terrible thing to create an event that sends debris at an apogee that goes above the International Space Station."¹¹ Bridenstine added, "That kind of activity is not compatible with the future of human spaceflight" and "it is not acceptable for us to allow people to create orbital debris fields that put at risk our

⁸ Press Briefing, Brian Hook, Office of the Spokesperson, U.S. Dep't of State (Apr. 2, 2019, 2:51 PM), <https://www.state.gov/briefings/departments-press-briefing-april-2-2019/> [<https://perma.cc/7ADN-9FT3>].

⁹ Phil Stewart, *U.S. Studying India Anti-Satellite Weapons Test, Warns of Space Debris*, REUTERS (Mar. 27, 2019, 1:39 PM), <https://www.reuters.com/article/us-india-satellite-usa/us-studying-india-anti-satellite-weapons-test-warns-of-space-debris-idUSKCN1R825Z> [<https://perma.cc/FSH6-AN2E>] (quoting Patrick Shanahan).

¹⁰ Colin Clark & Theresa Hitchens, *STRATCOM's Hyten Calls for Space Rules After India's ASAT Test: Update*, BREAKING DEFENSE (Apr. 9, 2019, 4:35 PM), <https://breakingdefense.com/2019/04/stratcoms-hyten-calls-for-space-rules-after-indias-asat-test/> [<https://perma.cc/Z9GT-5TJV>] (quoting John Hyten).

¹¹ Aziz Haniffa, *State Department Tries to Minimize Impact of NASA Comment on India's Anti-Satellite Test*, INDIA ABROAD (Apr. 4, 2019), https://www.indiaabroad.com/india/state-department-tries-to-minimize-impact-of-nasa-comment-on/article_c651a31e-572a-11e9-b843-9beec63ea816.html [<https://perma.cc/26L3-SSD9>] (quoting Jim Bridenstine).

people.”¹² The United States, if “savvy,” can seize upon sentiments such as these and coordinate a response.¹³

If the Indian ASAT test provides a catalyst for finding a multi-lateral solution to the problem of long-lasting orbital debris, then the question is how to go about achieving it. Declaring unilateral moratoriums, establishing non-binding norms of behavior, negotiating new binding treaties—there are many avenues the United States may pursue to address the hazards and security risks posed by debris-producing events. Why not explore using a tool seemingly few have thought to use—the international space law we already have?

Article IX calls for States to conduct their outer space activities with due regard for the corresponding interests of other States.¹⁴ Effectively ignored throughout its history, Article IX’s due regard principle has untapped potential to contribute to a safe and secure outer space environment. New technologies and changing circumstances can challenge existing law, requiring the law to adapt and evolve to remain relevant. The leading state actors in space can, through their statements, actions, and leadership, shape the meaning and substance of international law provisions. Hence, with concerted and coordinated effort, it may be possible for the United States to lead in shaping an interpretation of the due regard principle into a tool capable of addressing debris-generating events. This Article examines the potential of the due regard principle, the possibility of establishing a functional meaning, and some considerations involved in pursuing such a course of action.

II. THE DUE REGARD PRINCIPLE

A. ARTICLE IX OF THE OUTER SPACE TREATY

The due regard principle is expressed in the first sentence of Article IX that all spacefaring States signed. It states:

In the exploration and use of outer space, including the moon and other celestial bodies, States Parties to the Treaty shall be

¹² *Id.*

¹³ See Frank A. Rose, *India’s Anti-Satellite Test Presents a Window of Opportunity for the Trump Administration*, BROOKINGS INST.: ORDER FROM CHAOS (May 10, 2019), <https://www.brookings.edu/blog/order-from-chaos/2019/05/10/indias-anti-satellite-test-presents-a-window-of-opportunity-for-the-trump-administration/> [https://perma.cc/4YZF-3Q3Q].

¹⁴ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies art. IX, Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty].

guided by the principle of co-operation and mutual assistance and shall conduct all their activities in outer space, including the moon and other celestial bodies, with due regard to the corresponding interests of all other States Parties to the Treaty.¹⁵

Article IX goes on to state:

States Parties to the Treaty shall pursue studies of outer space, including the moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose. If a State Party to the Treaty has reason to believe that an activity or experiment planned by it or its nationals in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities of other States Parties in the peaceful exploration and use of outer space, including the moon and other celestial bodies, it shall undertake appropriate international consultations before proceeding with any such activity or experiment. A State Party to the Treaty which has reason to believe that an activity or experiment planned by another State Party in outer space, including the moon and other celestial bodies, would cause potentially harmful interference with activities in the peaceful exploration and use of outer space, including the moon and other celestial bodies, may request consultation concerning the activity or experiment.¹⁶

In summary, Article IX begins with the obligation of States to conduct their space activities “with due regard to the corresponding interests of all other [States].” It builds upon this obligation with three additional obligations: to avoid harmful contamination of outer space, to avoid adverse changes in the Earth environment due to the introduction of extraterrestrial matter, and to undertake appropriate international consultations if a State has reason to believe its space activities would cause potentially harmful interference to the space activities of other States.

Analysis of the duties within Article IX often focuses on these three additional obligations to the exclusion of the broader due regard principle.¹⁷ Carl Christol identified as a commonly held “premise” of Article IX the notion that it “was designed to pre-

¹⁵ *Id.*

¹⁶ *Id.*

¹⁷ See, e.g., Michael C. Mineiro, *FY-1C and USA-193 ASAT Intercepts: An Assessment of Legal Obligations Under Article IX of the Outer Space Treaty*, 34 J. SPACE L. 321 (2008) (the author applied the facts of ASAT test cases to the three additional

vent a launching State from knowingly introducing into the space environment without prior consultations with other States materials which in their original condition . . . could produce a potentially harmful interference in the space activities of other States.”¹⁸ However commonly held it might be, this narrow interpretation does not reflect the broader implications of the obligation to conduct space activities with due regard to the corresponding interests of other States. It does, however, demonstrate how Article IX’s due regard principle is often overlooked, even in discussions specifically about Article IX obligations. Nevertheless, assessing compliance under Article IX requires more than just considering whether consultations over harmful interference are required, or whether harmful contamination is avoided. Compliance also requires space activities to be conducted with due regard to the corresponding interests of other States; this obligation is independent of the three subsidiary obligations and must be assessed on its own merits.

B. DUE REGARD ON THE HIGH SEAS

The high seas offer a useful lens to view the development of the due regard principle. Historically, areas outside the territorial sovereignty of any State, such as the high seas, were generally recognized as places where sovereign rights could be exercised unimpeded.¹⁹ For instance, just under a century ago the Permanent Court of International Justice (PCIJ) observed, “[V]essels on the high seas are subject to no authority except that of the State whose flag they fly.”²⁰ This sentiment reflected a judicial view of the high seas that has been characterized “as one in which states may fully exercise their customary freedom as sovereigns.”²¹ In other words, vessels on the high seas did not have to act with due regard to the rights of other vessels.

obligations under Article IX, but did not treat the due regard principle as a distinct stand-alone obligation).

¹⁸ CARL Q. CHRISTOL, *THE MODERN INTERNATIONAL LAW OF OUTER SPACE* 792 (1982).

¹⁹ The concept of *mare liberum*, or freedom of the high seas, dates back to Hugo Grotius’s eponymous pamphlet, published anonymously in 1609. *See generally* HUGO GROTIUS, *THE FREE SEA* (David Armitage ed., Richard Hakluyt trans., 2004).

²⁰ S.S. “Lotus” (Fr. v. Turk.), Judgment, 1927 P.C.I.J. (ser. A) No. 10, at 25 (Sept. 7).

²¹ Brian McGarry, *The Development of Custom in Territorial Dispute Settlement*, 8 J. INT’L DISP. SETTLEMENT 339, 356 (2017).

By 1956, a more nuanced view had emerged. That year, the United Nations' International Law Commission (ILC) recommended states adopt the position that "States are bound to refrain from any acts which might adversely affect the use of the high seas by nationals of other States."²² States did exactly that in the 1958 Geneva Convention on the High Seas.²³ For example, Article 2 stated, "These freedoms, and others which are recognized by the general principles of international law, shall be exercised by all States with reasonable regard to the interests of other States in their exercise of freedom of the high seas."²⁴ In the 1974 *Fisheries Jurisdiction* case, the International Court of Justice (ICJ) indicated "reasonable regard" as used in Article 2 and "due regard" are equivalent concepts.²⁵ Moreover, the ICJ in *Fisheries Jurisdiction* validated the emergence of the due regard principle, observing that:

[O]ne of the advances in maritime international law, resulting from the intensification of fishing, that the former *laissez-faire* treatment of the living resources of the sea in the high seas has been replaced by a recognition of a duty to have due regard to the rights of other States and the needs of conservation for the benefit of all.²⁶

The 1982 United Nations Convention on the Law of the Sea (UNCLOS) makes numerous references to due regard and reasonable regard.²⁷ Article 87 provides a non-exhaustive list of freedoms, declaring they "shall be exercised by all States with due regard for the interests of other States in their exercise of the freedom of the high seas, and also with due regard for the rights under this Convention with respect to activities in the Area."²⁸ Article 147, paragraph 1, declares, "Activities in the

²² *Report of the International Law Commission to the General Assembly*, U.N. GAOR Supp. No. 9, at ch. II, § 3, art. 27, U.N. Doc A/3159 (1956), reprinted in [1956] 2 Y.B. Int'l L. Comm'n 278, U.N. Doc A/CN.4/SER.A/1956/Add.1.

²³ Geneva Convention on the High Seas, Apr. 29, 1958, 13 U.S.T. 2312, 450 U.N.T.S. 82.

²⁴ *Id.* art. 2.

²⁵ See *Fisheries Jurisdiction* (U.K. v. Ice.), Judgment, 1974 I.C.J. 3, ¶ 68 (July 25) ("[T]he principle of reasonable regard for the interests of other States enshrined in Article 2 of the Geneva Convention on the High Seas of 1958 requires Iceland and the United Kingdom to have due regard to each other's interests, and to the interests of other States, in those resources.").

²⁶ *Id.* ¶ 72.

²⁷ See U. N. Convention on the Law of the Sea, *opened for signature* Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter Law of the Sea Convention].

²⁸ *Id.* art. 87.

Area shall be carried out with reasonable regard for other activities in the marine environment.”²⁹ Paragraph 3 declares, “Other activities in the marine environment shall be conducted with reasonable regard for activities in the Area.”³⁰ Echoing the *Fisheries Jurisdiction* case, “reasonable regard” and “due regard” can be assumed to be equivalent in UNCLOS.³¹

In addition, Articles 56 and 58 address the coexistence of the rights of coastal States and the freedom of other States within exclusive economic zones. Article 56(2) declares: “In exercising its rights and performing its duties under this Convention in the exclusive economic zone, the coastal State shall have due regard to the rights and duties of other States and shall act in a manner compatible with the provisions of this Convention.”³² Article 58(3) declares:

In exercising their rights and performing their duties under this Convention in the exclusive economic zone, States shall have due regard to the rights and duties of the coastal State and shall comply with the laws and regulations adopted by the coastal State in accordance with the provisions of this Convention and other rules of international law in so far as they are not incompatible with this Part.³³

Due regard in the international law of the sea is inherently reciprocal. As Tullio Treves explains, “[W]hen the coexistence or competition between two equally legitimate activities is envisaged, the obligation of ‘due regard’ is always reciprocal.”³⁴ Consequently, one legitimate activity cannot be prioritized over another legitimate activity.³⁵ Instead, in a competition between legitimate activities, priority must be assessed, taking into account the importance of each activity and the extent of the anticipated impairment that one activity might subject upon another.³⁶ As the Permanent Court of Arbitration observed in the *Chagos Marine Protected Area* case between the United Kingdom (U.K.) and Mauritius, “In the majority of cases, this assess-

²⁹ *Id.* art. 147(1).

³⁰ *Id.* art. 147(3).

³¹ Tullio Treves, ‘Due Regard’ Obligations Under the 1982 UN Convention on the Law of the Sea: The Laying of Cables and Activities in the Area, 34 INT’L J. MARINE & COASTAL L. 167, 170 (2019).

³² Law of the Sea Convention, *supra* note 27, art. 56(2).

³³ *Id.* art. 58(3).

³⁴ Treves, *supra* note 31, at 184.

³⁵ *See id.* at 185.

³⁶ *See Chagos Marine Protected Area (Mauritius v. U.K.)*, 31 R.I.A.A. 359, 571 (Perm. Ct. Arb. 2015).

ment will necessarily involve at least some consultation with the rights-holding State.”³⁷

Hence, the modern international law of the sea depends on the due regard principle “for ensuring coexistence between equally legitimate activities in a given maritime area.”³⁸ As described below, the due regard principle is intended to play a similar role when applied to outer space, but in practice it has not realized its potential.

C. THE APPLICATION OF DUE REGARD TO OUTER SPACE

Article IX’s due regard principle establishes an obligation upon signatories of the Outer Space Treaty to take the rights of other signatory States into account when exercising their own rights. As the Chairman of the Legal Subcommittee of the United Nations (UN) Committee on the Peaceful Uses of Outer Space (COPUOS) during the negotiation of the Outer Space Treaty, Manfred Lachs, wrote, “These interests are consequent upon the recognition of the rights of other States and are to be construed on a basis of a reasonable interpretation of those rights. They constitute the limits of the freedom of action of States in outer space.”³⁹ Accordingly, the due regard principle simultaneously limits and protects a State’s freedom of action in space. In other words, you may not encroach upon the freedoms of others, just as others may not encroach upon your freedoms.

The application of the due regard principle to debris-creating activities is therefore a balancing of the countervailing rights of States. Take, for example, kinetic ASAT tests. Nothing in the Outer Space Treaty specifically prohibits ASAT tests.⁴⁰ Moreover, the right to use and explore outer space freely—to include the use of space to conduct ASAT tests—is protected under Article I of the Outer Space Treaty.⁴¹ However, one likely outcome of a kinetic ASAT test is the creation of debris. This creation of long-lasting debris in a crowded orbit will affect the freedom of all States to use that orbit. Depending on its altitude, debris can remain in orbit for many years, risking damage or destruction of

³⁷ *Id.* at 571–72.

³⁸ Treves, *supra* note 31, at 167–68.

³⁹ MANFRED LACHS, THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAW MAKING 43 (Tanja Masson-Zwann & Stephan Hobe eds., Martinus Nijhoff 2010) (1972).

⁴⁰ See generally Outer Space Treaty, *supra* note 14.

⁴¹ *Id.* art. I.

satellites.⁴² Debris also places astronauts at risk.⁴³ As NASA Administrator Jim Bridenstine stated in the aftermath of India's ASAT test, "That kind of activity is not compatible with the future of human spaceflight."⁴⁴ It is also not compatible with the proliferation of commercial space activity, all of which is legally regarded as national activity pursuant to Article VI of the Outer Space Treaty.⁴⁵ Hence, the freedom to litter orbits with space debris must be weighed against the effect those actions have on the ability of other States to use the same orbits, as is their right to do. Importantly, the calculus changes as space activities increase. What may once have been acceptable may now be unacceptable. As Bridenstine observed, "[C]reating debris fields intentionally is wrong . . . the entire world [has to] step up and say, if you're going to do this, you're going to pay a consequence—and right now that consequence is not being paid."⁴⁶

Although Manfred Lachs tells us the due regard principle recognizes the limits of freedom of action in outer space,⁴⁷ in practice it is not all clear where those limits lie. The due regard principle, simply put, does not guide the conduct of States. This is unsurprising because "[i]f a treaty is to be regarded as creating 'hard' obligations, i.e., possessing some autonomous binding norms, it must be precisely worded and specify the exact obligations undertaken by signatory states."⁴⁸ The Outer Space Treaty does not define "due regard," and Article IX is not precisely worded.⁴⁹ Moreover, States have yet to establish a clear interpretation for the treaty language. Consequently, the principle's vagueness hinders its ability to serve as a guide to behavior.

⁴² Emily Kwong, *Space Junk: How Cluttered is the Final Frontier?*, NAT'L PUB. RADIO (Jan. 13, 2020), [npr.org/2020/01/10/795246131/space-junk-how-cluttered-is-the-final-frontier](https://www.npr.org/2020/01/10/795246131/space-junk-how-cluttered-is-the-final-frontier) [<https://perma.cc/33FC-W364>].

⁴³ *Id.*

⁴⁴ Marcia Smith, *Bridenstine Talks Moon by 2024, Slams Indian ASAT Test*, SPACE POL'Y ONLINE (Apr. 1, 2019, 10:52 PM), <https://spacepolicyonline.com/news/bridenstine-talks-moon-by-2024-slams-indian-asat-test/> [<https://perma.cc/BPA8-NLTS>] (quoting Jim Bridenstine).

⁴⁵ Outer Space Treaty, *supra* note 14, art. VI.

⁴⁶ Sarah Lewin, *India's Anti-Satellite Test Created Dangerous Debris, NASA Says*, SPACE.COM (Apr. 1, 2019), <https://www.space.com/nasa-chief-condemns-india-anti-satellite-test.html> [<https://perma.cc/A4ZS-YTL6>] (quoting Jim Bridenstine).

⁴⁷ LACHS, *supra* note 39, at 43.

⁴⁸ David Tan, *Towards a New Regime for the Protection of Outer Space as the "Province of All Mankind"*, 25 YALE J. INT'L L. 145, 165 (2000).

⁴⁹ See N. Jasentuliyana, *Space Debris and International Law*, 26 J. SPACE L. 139, 140–41 (1998) ("[T]he provisions of Article IX, like many other parts of the Outer Space Treaty, are by their nature not precise.").

As currently interpreted by States, the due regard principle imposes no cost and provides no benefit. States do not know what they are obligated to do or not to do in order to comply with Article IX's due regard principle.

China's 2007 ASAT test is instructive for assessing how States have applied—or, more accurately, not applied—the due regard principle to promote responsible behavior in space. On January 11, 2007, China conducted a kinetic ASAT test with a modified ballistic missile, destroying its own defunct Fengyun weather satellite.⁵⁰ The test was the single worst debris-related contamination incident to date involving a human space object, littering low earth orbit with nearly 3,400 pieces of trackable debris⁵¹ and an estimated 150,000 pieces of untrackable debris.⁵² At an altitude of around 850 kilometers (530 miles) upon impact, much of this debris will remain in LEO for decades.⁵³

China's ASAT test drew widespread condemnation.⁵⁴ However, almost none of the criticism came in the form of a legal objection. Japan was the only nation to accuse China of acting illegally, but did not specify the basis for its allegation other than to say it was a violation of the Outer Space Treaty.⁵⁵ A British spokesperson expressed the prevailing view that the test was lamentable, but not unlawful, stating:

We are concerned about the impact of debris in space and we expressed that concern . . . We don't believe that this does contravene international law. What we are concerned about however is lack of consultation and we believe that this development of this technology and the manner in which this test was conducted is inconsistent with the spirit of China's statements to the UN and other bodies on the military use of space.⁵⁶

⁵⁰ C. Stokely & M. Matney, *Haystack Radar Observations of Debris From the Fengyun-1C Antisatellite Test*, 12 NASA ORBITAL DEBRIS Q. NEWS 1, 7 (July 2008), <https://orbitaldebris.jsc.nasa.gov/quarterly-news/pdfs/odqnv12i3.pdf> [<https://perma.cc/V5TF-GRG4>].

⁵¹ NASA Orbital Debris Program Office, *Fengyun-1C Debris Cloud Remains Hazardous*, 18 NASA ORBITAL DEBRIS Q. NEWS 1, 2 (Jan. 2014), <https://orbitaldebris.jsc.nasa.gov/quarterly-news/pdfs/odqnv18i1.pdf> [<https://perma.cc/V5L3-7DF4>].

⁵² Stokely & Matney, *supra* note 50, at 8.

⁵³ *Id.* at 7.

⁵⁴ See *supra* Part I.

⁵⁵ JAMES CLAY MOLTZ, *ASIA'S SPACE RACE: NATIONAL MOTIVATIONS, REGIONAL RIVALRIES, AND INTERNATIONAL RISKS* 64–65 (2012).

⁵⁶ Richard Spencer, *Chinese Missile Destroys Satellite in Space*, THE TELEGRAPH (Jan. 19, 2007, 2:17 PM), <https://www.telegraph.co.uk/news/worldnews/>

As the Chinese ASAT test illustrates, the due regard principle did nothing to regulate behavior in 2007, even when it came to the intentional creation of long-lasting, harmful debris. The legal landscape had not changed by the time India conducted a (much less) destructive test of its own in 2019, despite the continual growth in the use of outer space and in the importance of space applications. Notably, in the days following India's test, the German delegation at the meeting in Vienna of the Legal Subcommittee of COPUOS called for a legally binding ban on the intentional destruction of space objects resulting in the generation of long-lasting debris.⁵⁷ This was an implicit admission that no international space law—and certainly not the due regard principle—currently provides such a prohibition.

Although it is a legally binding principle (at least, as a matter of treaty law), the due regard principle in Article IX is vague, weak, and has yet to achieve an accepted interpretation that would enable it to be applied in practice. It is, therefore, failing to live up to its potential as a guide for lawful conduct. It does not have to remain this way. Even though States have not used the due regard principle in the past as a tool to regulate responsible behavior in space, that does not prevent the principle from being interpreted in a way that might be useful in the future. As in other domains, existing legal principles must evolve and adapt to new technologies and circumstances. The increasingly congested outer space environment provides an opportunity for the due regard principle to fulfill its promise.

III. ESTABLISHING MEANING THROUGH STATE PRACTICE

The practice of States plays a significant role in establishing the meaning, or accepted interpretation, of international treaties. According to Article 32 of the Vienna Convention on the Law of Treaties (VCLT), when the meaning of treaty provisions is ambiguous or obscure, “[r]ecourse may be had to supplementary means of interpretation.”⁵⁸ Supplementary means of inter-

1539948/Chinese-missile-destroys-satellite-in-space.html [https://perma.cc/HSQ6-9L8S].

⁵⁷ German Delegation, Statement on Space Debris at the 58th Session of the UN Space Legal Subcommittee (Apr. 1–12, 2019), *available at* <https://wien-io.diplo.de/iow-en/news/statement-debris/2208724> [https://perma.cc/6AZQ-ERY5].

⁵⁸ Vienna Convention on the Law of Treaties art. 32, May 23, 1969, 1155 U.N.T.S. 331 [hereinafter VCLT]. The United States has not ratified the VCLT,

pretation under Article 32 include “subsequent practice in the application of the treaty,” according to the 2018 report of the International Law Commission (ILC).⁵⁹ A subsequent practice that serves as a supplementary means of interpretation under Article 32 “consists of conduct by one or more parties in the application of the treaty, after its conclusion.”⁶⁰ According to the ILC’s commentary to the 2018 draft conclusions, this form of subsequent practice “does not require the agreement of all the parties” and “any practice in the application of the treaty that may provide indications as to how the treaty is to be interpreted may be a relevant supplementary means of interpretation.”⁶¹ Moreover, subsequent practice “may consist of any conduct of a party in the application of a treaty, whether in the exercise of its executive, legislative, judicial, or other functions.”⁶² This “may include official statements concerning the treaty’s meaning, protests against non-performance or tacit acceptance of statements or acts by other parties,” according to the ILC’s commentary.⁶³

Because the meaning is obscure, Article IX’s due regard principle requires subsequent State practice in the application of the treaty as a supplemental means of interpretation, as contemplated under Article 32 of the VCLT. The ILC has concluded that subsequent practice under Article 32 “may contribute to the clarification of the meaning of a treaty” and the effect of subsequent practice in the application of a treaty does not amend or modify a treaty, but merely intends to interpret it.⁶⁴ The due regard principle is not in need of a modification, because there has never been a widely-accepted meaning to be modified. Rather, the due regard principle is in need of subse-

but it considers many of its provisions “to constitute customary international law on the law of treaties.” *Vienna Convention on the Law of Treaties*, U.S. DEP’T OF STATE, <https://2009-2017.state.gov/s/1/treaty/faqs/70139.htm> [<https://perma.cc/CC6P-T8LL>] (last updated Jan. 20, 2017).

⁵⁹ Int’l Law Comm’n, Rep. on the Work of Its Seventieth Sess., at 17, ¶ 4, U.N. Doc A/73/10 (2018) *available at* <https://undocs.org/en/A/73/10> [<https://perma.cc/HE2Y-ZVA2>] [hereinafter ILC Report].

⁶⁰ *Id.* at 27, ¶ 13. This is to be distinguished from subsequent practice as an authentic means of interpretation under VCLT article 31(b)(3), which, according to the ILC Report, “consists of conduct in the application of a treaty, after its conclusion, which establishes the agreement of the parties regarding the interpretation of the treaty.” *Id.*

⁶¹ *Id.* at 33, ¶¶ 23–24.

⁶² *Id.* at 37, ¶ 35.

⁶³ *Id.* at 36–37, ¶ 35.

⁶⁴ *Id.* at 51, ¶ 1.

quent practice to assign a functional meaning, thereby revealing its potential.

This interpretive approach has been called evolutive interpretation. In this approach, “the idea is that a treaty provision, when adopted, might be open-textured, with the parties intending that it would cover certain future developments that might not be known at the time.”⁶⁵ According to the ILC, subsequent practice may, in part, also determine whether the parties intended the meaning of a treaty provision to be capable of evolving over time.⁶⁶ Importantly, with regard to the possibility for evolutive interpretation of the Outer Space Treaty, it is worth recalling the words of Manfred Lachs:

These principles [of the Outer Space Treaty] may have been couched in very general and broad terms . . . Be this as it may, the provisions in question can hardly be regarded as nominal or devoid of substantive meaning . . . It may have been premature to enter into any more detailed specification of them or of the corresponding obligations. But the need for this will grow in confrontation with practice, while adequate interpretation will be called for in concrete situations.⁶⁷

Indeed, as Lachs makes clear, evolution was part of the design when negotiating the Outer Space Treaty.⁶⁸ Dembling and Arons echo this sentiment in their contemporaneous account of the Treaty’s negotiation, concluding, “In establishing certain general principles, the Treaty leaves much to interpretation by the parties.”⁶⁹ To paraphrase Lachs, the need for an “adequate interpretation” of the obligations of the due regard principle is now “called for in concrete situations.”⁷⁰ The call grows more urgent as the space environment becomes increasingly congested with satellites. The time is ripe for a specific interpretation of the due regard principle.

Updating treaty interpretation through State practice is a practical endeavor and may, in some circumstances, be preferable to the creation of new laws. As one commentator has ob-

⁶⁵ Sean D. Murphy, *The Relevance of Subsequent Agreement and Subsequent Practice for the Interpretation of Treaties*, in TREATIES AND SUBSEQUENT PRACTICE 82, 86 (Georg Nolte, ed., 2013).

⁶⁶ ILC Report, *supra* note 59, at 6, ¶¶ 14–15.

⁶⁷ LACHS, *supra* note 39, at 108.

⁶⁸ *Id.*

⁶⁹ Paul G. Dembling & Daniel M. Arons, *The Evolution of the Outer Space Treaty*, 33 J. AIR L. & COM. 419, 456 (1967).

⁷⁰ LACHS, *supra* note 39, at 108.

served, “[A]mending the language of international treaties might be cumbersome or impossible, but some degree of vagueness and ambiguity in treaty language can permit shared interpretations to be modified over time, thus providing the community of states with a relatively simple ‘backdoor’ means of changing the effect of a treaty.”⁷¹ “Treaties are cumbersome devices that cannot change quickly, and thus may become increasingly less responsive to complex realities,” according to another commentator.⁷² In general, treaties from the previous century may be “showing their age, and hence we may be entering a period when greater flexibility in treaty interpretation is needed.”⁷³ Additionally, “[s]tate practice reduces the transaction costs associated with the development and operation of treaties.”⁷⁴ These are particularly important considerations when it comes to international space law, where the transaction costs for new law have become insurmountably high.

The last of the five international space law treaties negotiated within COPUOS was the Moon Agreement, opened for signature in 1979.⁷⁵ Since then, the treaty-making phase has given way to efforts in COPUOS to negotiate non-binding resolutions or focus on broadening the acceptance of the existing space law treaties.⁷⁶ In 1999, COPUOS sought to regain relevance by overhauling its agenda structure in order to encourage taking on new agenda items without States having to worry that the items would either languish forever or become law.⁷⁷ Despite these changes, the former Chairman of the COPUOS Legal Subcom-

⁷¹ Rosa Brooks, *Rule of Law in the Gray Zone*, MOD. WAR INST. WEST POINT (July 2, 2018), <https://mwi.usma.edu/rule-law-gray-zone/> [https://perma.cc/FR3A-7DEE].

⁷² Murphy, *supra* note 65, at 87.

⁷³ *Id.*

⁷⁴ William J. Aceves, *The Economic Analysis of International Law: Transaction Cost Economics and the Concept of State Practice*, 17 U. PA. J. INT’L ECON. L. 995, 1056 (1996).

⁷⁵ Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *opened for signature* Dec. 18, 1979, 1363 U.N.T.S. 3.

⁷⁶ Kai-Uwe Schrogl, *A New Impetus for Space Law Making: The 1999 Reform of UNCOPUOS and How It Works*, 43 PROC. ON L. OUTER SPACE 96, 97–98 (2000).

⁷⁷ *Id.* Results have included resolutions designed to clarify how best to apply the concept of “launching State” as expressed in the Registration Convention and the Liability Convention, and how to encourage States to comply with their obligation to register their space objects. See G.A. Res. 59/115, Application of the Concept of the “Launching State” (Dec. 10, 2004); see also G.A. Res. 62/101, Recommendations on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects (Dec. 17, 2007).

mittee lamented as recently as 2014 that COPUOS was no closer to regaining its former position at the forefront of developing space law.⁷⁸ Calls for new space law must recognize that the Legal Subcommittee remains stuck in a “difficult period, characterized by the understanding for the need of change but no emerging consensus on how to accomplish this.”⁷⁹ COPUOS member states have not been able to agree to pursue new binding space treaties for decades, and that does not appear likely to change anytime soon.

Because the transaction costs of developing new space law within COPUOS are prohibitive, it might be reasonable to assume that the pursuit of non-legally binding agreements outside of COPUOS would fare better. However, the failed draft International Code of Conduct for Outer Space Activities (ICOC) exemplifies the challenges of this alternative approach. In 2008, the European Union (EU) published a draft Code of Conduct for Outer Space Activities.⁸⁰ As the effort gained support among other nations, including the United States, the EU Code of Conduct became the basis for what would be known as the ICOC.⁸¹ After several years and multiple rounds of consultation, the EU arranged a multilateral negotiation in New York in 2015.⁸² On the first day, progress came to a grinding halt.⁸³ States disputed whether an EU-arranged meeting was the appropriate forum to discuss space norms, as opposed to COPUOS or another UN committee like the Conference on Disarmament.⁸⁴ The lack of a familiar forum contributed to further disagreement over the proper rules of procedure.⁸⁵ These procedural disputes “re-

⁷⁸ Kai-Uwe Schroggl, *The New Debate on the Working Methods of the UNCOPUOS Legal Subcommittee*, 105 ACTA ASTRONAUTICA 101, 102 (2014), available at <https://www.sciencedirect.com/science/article/abs/pii/S0094576514002896> [<https://perma.cc/2GMR-H3GB>].

⁷⁹ *Id.* at 104.

⁸⁰ Policy Innovation Memorandum No. 10 from Michael Zenko on A Code of Conduct for Outer Space, Council on Foreign Rel. (Nov. 30, 2011), <https://www.cfr.org/report/code-conduct-outer-space> [<https://perma.cc/FW6K-GF2G>].

⁸¹ Lisa Daniel, *Defense, State Agree to Pursue Conduct Code for Outer Space*, AM. FORCES PRESS SERV. (Jan. 18, 2012), <https://archive.defense.gov/news/newsarticle.aspx?id=66833> [<https://perma.cc/Q3S3-8744>].

⁸² P.J. Blount, *Sorting Out Self-Defence in Space: Understanding the Conflicting Views on Self-Defence in the EU Code of Conduct*, in MONOGRAPH SERIES V: CONFLICTS IN SPACE AND THE RULE OF LAW 311 (Maria Manoli & Sandy Belle Habchi eds., 2017).

⁸³ *Id.* at 320.

⁸⁴ *Id.*

⁸⁵ *Id.*

sulted in immediate deadlock on the first day of the Multilateral Negotiations due to a palpable unwillingness to go forward on the part of a number of States.”⁸⁶ Ultimately, there were more than just procedural disputes to blame for the demise of the ICOC, and the fruitless negotiation in New York proved to be the ICOC’s high water mark.⁸⁷ The effort has been effectively abandoned with no indications of a revival.

Even with COPUOS’s recent success in negotiating space sustainability guidelines, the challenge of developing new instruments remains evident. In June 2019, COPUOS adopted a preamble and twenty-one guidelines for the long-term sustainability of outer space.⁸⁸ The result of a nine-year effort by the Long Term Sustainability (LTS) Working Group, the LTS guidelines do not address debris creation other than to encourage States to implement space debris mitigation measures—such as those adopted by COPUOS in 2007—within national regulatory frameworks.⁸⁹ Those voluntary debris mitigation guidelines call upon States to avoid the intentional destruction of on-orbit space objects or other harmful activities that might create long-lived debris.⁹⁰ The Chair of the LTS Working Group hailed the achievement as “a historic moment for the Committee” and “a significant step forward for ensuring the long-term sustainability of space activities.”⁹¹ The Chair of the Sixty-Second Session of COPUOS called it “probably the most

⁸⁶ *Id.* at 321.

⁸⁷ The ICOC was also hampered by a consultation process that left some countries feeling excluded, and a lack of support from Russia and China, which preferred their own joint draft Prevention on the Placement of Weapons in Outer Space Treaty (PPWT). See Frank A. Rose, *Safeguarding the Heavens: The United States and the Future of Norms of Behavior in Outer Space*, at 5 (Brookings Inst. Policy Brief, 2018), available at https://www.brookings.edu/wp-content/uploads/2018/06/FP_20180614_safeguarding_the_heavens.pdf [<https://perma.cc/5EKN-E5E2>].

⁸⁸ Comm. on the Peaceful Uses of Outer Space, Rep. on the Work of Its Sixty-Second Session, at 54–69, U.N. Doc A/74/20 (2019) [hereinafter LTS Guidelines].

⁸⁹ *Id.*; see also Peter Martinez, *The UN COPUOS Guidelines for the Long-Term Sustainability of Outer Space Activities*, SECURE WORLD FOUND. (Nov. 2019), https://swfound.org/media/206891/swf_un_copuos_lts_guidelines_fact_sheet_november-2019-1.pdf [<https://perma.cc/PN62-APRC>].

⁹⁰ LTS Guidelines, *supra* note 88, at 54.

⁹¹ Press Release, Comm. on Peaceful Uses of Outer Space, Guidelines for the Long-Term Sustainability of Outer Space Activities of the Committee on Peaceful Uses of Outer Space Adopted, U.N. Press Release UNIS/OS/518 (June 22, 2019), <https://www.unoosa.org/oosa/en/informationfor/media/2019-unis-os-518.html> [<https://perma.cc/NJV9-F2AF>] (quoting Peter Martinez).

significant achievement of COPUOS in a decade.”⁹² The LTS guidelines are noteworthy in part because they represent a rare tangible achievement for COPUOS. Nevertheless, acclaim for this hard-fought achievement must be tempered with the acknowledgment that the guidelines are non-binding, took nearly a decade to produce, and are “largely codifying behaviors already implemented by spacefaring nations.”⁹³ The LTS guidelines demonstrate that international transaction costs may be overcome, but they are still significant, even for non-binding instruments.

The transaction costs of negotiating new instruments can be domestic as well as international in scope. Even non-binding international space instruments can pose sizable challenges domestically, as the United States learned from the ICOC.⁹⁴ As noted above, the ICOC was an attempt at a non-legally binding political agreement. As such, the U.S. Congress had no formal role in approving it, as it might have had for a new legally-binding international agreement.⁹⁵ However, that did not stop the U.S. Congress from throwing up hurdles. In the National Defense Authorization Act of 2013 (NDAA), Congress passed a provision seeking to limit the President’s ability to bypass Congress. It stated:

SEC. 913. Limitation on International Agreements Concerning Outer Space Activities.

(a) CERTIFICATION REQUIRED.—If the United States becomes a signatory to a non-legally binding international agreement concerning an International Code of Conduct for Outer Space Activities or any similar agreement, at the same time as the United States becomes such signatory—

(1) the President shall submit to the congressional defense committees, the Permanent Select Committee on Intelligence of the House of Representatives, and the Select Committee on Intelligence of the Senate a certification that such agreement has no legally-binding effect or basis for limiting the activities of the United States in outer space; and

⁹² *Id.* (quoting Andre Rypl).

⁹³ Audrey M. Schaffer, *The Role of Space Norms in Protection and Defense*, 87 JOINT FORCE Q. 88, 90 (2017).

⁹⁴ See John S. Goehring, *Real-World Lessons on Achievable Space Governance From the International Code of Conduct For Outer Space Activities, the Iran Nuclear Agreement, and the Paris Climate Agreement*, in MONOGRAPH SERIES V: CONFLICT AND THE RULE OF LAW 381, 388 (Maria Manoli & Sandy Belle Habchi eds., 2017).

⁹⁵ *Id.* at 391.

(2) the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, and the Director of National Intelligence shall jointly submit to the congressional defense committees a certification that such agreement will be equitable, enhance national security, and have no militarily significant impact on the ability of the United States to conduct military or intelligence activities in space.⁹⁶

Ultimately, the demise of the ICOC in the negotiation stage meant that no certifications to Congress were ever needed. However, these NDAA provisions made the executive branch's pursuit of non-binding rules significantly harder than was likely anticipated.

Whether through a legally binding or non-legally binding instrument, establishing new rules and norms for space activities out of whole cloth involves significant transaction costs, both domestically and within international fora. Given these costs, interpreting the law we already have in order to address the growing threat of orbital debris presents a credible alternative.

IV. PAST U.S. EFFORTS TO SHAPE INTERPRETATIONS IN SPACE LAW

Interpreting the meaning of legal principles to accommodate national interests in outer space may sound unrealistic to some, but in fact the United States has embarked on this process before: the successful U.S. effort to shape the meaning of "peaceful purposes," and the more recent domestic law developments influencing the interpretation of the non-appropriation principle as it relates to space resources.

A. PEACEFUL PURPOSES

The notion that space is to be used for peaceful purposes predates the Outer Space Treaty. In 1961, the UN passed a non-legally binding resolution entitled *International Co-Operation in the Peaceful Uses of Outer Space*, the very title of which suggested space should be for peaceful uses.⁹⁷ This was followed in 1963 by the non-legally binding *Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space* (1963 Declaration), which would be the precursor to the 1967 Outer

⁹⁶ National Defense Authorization Act for Fiscal Year 2013, Pub. L. No. 112-239, 126 Stat. 1632, § 913 (2013).

⁹⁷ G.A. Res. 1721 (XVI), *International Co-Operation in the Peaceful Uses of Outer Space* (Dec. 20, 1961).

Space Treaty.⁹⁸ The 1963 Declaration recognized “the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes.”⁹⁹ As early as 1962, as it prepared for the upcoming UN negotiations for the non-binding 1963 Declaration, the United States recognized that use of the term “peaceful purposes” would become a point of contention as States negotiated the principles that would govern the space domain. Mindful of the value of its military use of space for reconnaissance purposes, the United States set out to proactively shape the interpretation of “peaceful purposes.”

In May 1962, President Kennedy directed the creation of a committee for the purpose of “formulating a position which avoids the dangers of restricting ourselves, compromising highly classified programs, or providing assistance of significant military value to the Soviet Union and which at the same time permits us to continue to work for disarmament and international cooperation in space.”¹⁰⁰ The resulting committee, called the Committee on Satellite Reconnaissance Policy, identified the need to mitigate against confusion over the legality of using space for military purposes.¹⁰¹ It acknowledged that “other governments and peoples are in varying degrees of ignorance about” the United States’ military satellite reconnaissance program.¹⁰² The Committee recognized there are “confused views” outside of the United States about the “distinction between ‘peaceful,’ ‘military,’ ‘non-prohibited,’ and ‘legal’ on the one hand, and ‘aggressive,’ ‘civilian,’ ‘prohibited,’ and ‘illegal’ on the other.”¹⁰³ As an example, the Committee cited to the earlier 1961 resolution, a document which “may seem to many to militate against any ‘military’ use of space” because of the connotations of the title, *International Cooperation in the Peaceful Uses of*

⁹⁸ G.A. Res. 1962 (XVII), Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space (Dec. 13, 1963).

⁹⁹ *Id.*

¹⁰⁰ *National Security Action Memorandum No. 1561* (May 26, 1962), in FOREIGN RELATIONS OF THE UNITED STATES, 1961–1963, ORGANIZATION OF FOREIGN POLICY; INFORMATION POLICY; UNITED NATIONS; SCIENTIFIC MATTERS, at Doc. 420 (Paul Claussen et al. eds., 2001), available at <https://history.state.gov/historicaldocuments/frus1961-63v25/d420> [<https://perma.cc/3CDD-XKUT>].

¹⁰¹ *Report by the Committee on Satellite Reconnaissance Policy* (July 2, 1962), in FOREIGN RELATIONS OF THE UNITED STATES, 1961–1963, *supra* note 100, at Doc. 421, available at <https://history.state.gov/historicaldocuments/frus1961-63v25/d421> [<https://perma.cc/ND8D-B635>].

¹⁰² *Id.*

¹⁰³ *Id.*

Outer Space, notwithstanding that the connotations are “distinguish[able] from its actual operative provisions.”¹⁰⁴

In short, it appeared as though other States could begin to associate “peaceful” with “non-military,” and “military” with “aggressive.” That was a problem for the United States. In its report, the Committee expressed the policy concern as follows:

Arguments have been advanced, on the premise that a reconnaissance satellite program is a “military” (as opposed to “peaceful”) program, that the use of such satellites in outer space is an aggressive act and thus a violation of international law. The confusions over legality, propriety and peacefulness earlier noted can be exploited for use against space reconnaissance. Thus it could be argued, with considerable appeal, that the military uses of outer space, such as satellite reconnaissance, should be proscribed as non-peaceful.¹⁰⁵

Accordingly, the Committee advised: “The US should therefore continue to avoid any position implying that reconnaissance activities in outer space are not legitimate. Similarly, we should avoid any position declaring or implying that such activities are not ‘peaceful uses.’”¹⁰⁶ In response, President Kennedy directed the State Department to negotiate at the upcoming COPUOS deliberations with a particular objective: “To show that the distinction between peaceful and aggressive uses of outer space is not the same as the distinction between military and civilian uses, and that U.S. aims to keep space free from aggressive use and offers cooperation in its peaceful exploitation for scientific and technical purposes.”¹⁰⁷

Hence, as early as August 1962, the official U.S. position from the top down was to embrace the notion of “peaceful use” of space while making a coordinated effort to define “peaceful” as “non-aggressive” rather than “non-military.” On December 3, 1962, the U.S. representative to the First Committee of the United Nations, Senator Albert Gore, expressed this position in his remarks: “It is the view of the United States that outer space

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *National Security Action Memorandum No. 183* (Aug. 27, 1962), in *FOREIGN RELATIONS OF THE UNITED STATES, 1961–1963*, *supra* note 100, at Doc. 425, *available at* <https://history.state.gov/historicaldocuments/frus1961-63v25/d425> [<https://perma.cc/KFW9-QB8R>].

should only be used for peaceful—that is, non-aggressive and beneficial—purposes.”¹⁰⁸

According to Bin Cheng, the United States was “trying hard to attribute an entirely new meaning of the word ‘peaceful’ . . . a bold attempt to bypass and circumvent the then still prevalent attitude that all military activities should be banned from outer space.”¹⁰⁹ Though such an attitude may have been prevalent, in fact space has been used for military reconnaissance since the dawn of the space age,¹¹⁰ which is why the United States sought to counter interpretations that would have suggested otherwise. In this the United States has largely succeeded. The view “which today has gained general acceptance, is that nonaggressive military uses are peaceful.”¹¹¹ Nevertheless, “arguments still persist as to whether [peaceful purposes] refers to ‘non-military’ or ‘non-aggressive.’”¹¹² Accordingly, U.S. shaping efforts have continued.

The United States has carried on methodically bolstering its interpretation of “peaceful purposes,” reinforcing its meaning as “non-aggressive.” For example, a series of national space policies have expressly stated that peaceful purposes allow for space activities in pursuit of national security goals (1982 and 1989), for “defense and intelligence-related activities in pursuit of national interests” (1996), for “U.S. defense and intelligence-related activities in pursuit of national interests” (2006), and “for space to be used for national and homeland security activities” (2010).¹¹³

¹⁰⁸ Ernest L. Kerley et al., *Contemporary Practice of the United States Relating to International Law*, 57 AM. J. INT’L L. 403, 428 (1963).

¹⁰⁹ Bin Cheng, *Properly Speaking, Only Celestial Bodies Have Been Reserved for Use Exclusively for Peaceful (Non-Military) Purposes, but Not Outer Void Space*, 75 INT’L L. STUD. 81, 86 (2000).

¹¹⁰ *Report by the Committee on Satellite Reconnaissance Policy*, *supra* note 101.

¹¹¹ CHRISTOL, *supra* note 18, at 22; *see also* Dale Stephens, *The International Legal Implications of Military Space Operations: Examining the Interplay Between International Humanitarian Law and the Outer Space Legal Regime*, 94 INT’L L. STUD. 75, 81 (2018).

¹¹² Steven Freeland, *Peaceful Purposes? Governing the Military Uses of Outer Space*, 18 EUR. J.L. REFORM 35, 42 (2016).

¹¹³ U.S. National Space Policy, National Security Decision Directive/NSDD-42 (July 4, 1982), *available at* <https://fas.org/spp/military/docops/national/nsdd-42.htm> [<https://perma.cc/LZP6-7FLT>]; National Space Policy Directives and Executive Charter, National Security Presidential Directive No.1/NSPD-1 (Nov. 2, 1989), *available at* <https://fas.org/spp/military/docops/national/nspd1.htm> [<https://perma.cc/VCG9-J6JW>]; U.S. National Space Policy, Presidential Decision Directive/NSC-49/NSTC-8 (Sept. 14, 1996), *available at* <https://fas.org/spp/military/docops/national/nstc-8.htm> [<https://perma.cc/YU4L-LX7H>];

B. SPACE RESOURCE MINING AND THE NON-APPROPRIATION PRINCIPLE

While shaping the interpretation of “peaceful purposes” has been ongoing since 1962, the issue of outer space resource mining is a more recent example of this evolutionary process in action. Technological developments have hastened the need for clarity on the question of whether international law allows for property interests in space. Article II of the Outer Space Treaty declares that “[o]uter space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”¹¹⁴ For decades, scholars have debated whether this non-appropriation principle permits private actors to assert property rights in resources harvested from the Moon or asteroids.¹¹⁵ “[T]he ability of a mining venture to lawfully extract mineral resources [from a celestial body] remains somewhat uncertain,” observes one scholar.¹¹⁶ In one view, “the commercial need would necessitate the assertion of exclusivity” by investors, and “it is generally considered that the existence of private [exclusive] property rights requires the existence of state sovereignty, which is expressly prohibited by Article II.”¹¹⁷ In addition, assertions of private property rights in resources taken from celestial bodies is seen as problematic by some who “argue that, since

U.S. National Space Policy, National Space Policy Directive/NSPD-49 (Aug. 31, 2006), *available at* <https://fas.org/irp/offdocs/nspd/space.pdf> [<https://perma.cc/W5VZ-BVPJ>]; National Space Policy of the United States of America, Presidential Directive/PPD-4 (June 28, 2010), *available at* https://aerospace.org/sites/default/files/policy_archives/National%20Space%20Policy%2028Jun10.pdf [<https://perma.cc/8UAU-9CX4>]. President Carter’s 1978 National Space Policy also said, “‘Peaceful purposes’ allow for military and intelligence-related activities in pursuit of national security and other goals,” but it was classified as confidential when issued, blunting its ability to shape international perspectives. U.S. National Space Policy, Presidential Directive/PD/NSC-37 (May 11, 1978), *available at* <https://aerospace.org/sites/default/files/2019-02/PD-37%20National%20Space%20Policy%2011May78.pdf> [<https://perma.cc/2TD3-GWLE>].

¹¹⁴ Outer Space Treaty, *supra* note 14, art. II.

¹¹⁵ *See, e.g.*, RICKY J. LEE, LAW AND REGULATION OF COMMERCIAL MINING OF MINERALS IN OUTER SPACE 182 (2012); Frans G. von der Dunk, *Asteroid Mining: International and National Legal Aspects*, 26 MICH. ST. INT’L L. REV. 83, 91 (2017); Brian J. Egan, Legal Advisor, U.S. Dept. of State, Remarks at the Galloway Symposium on Critical Issues in Space Law (Dec. 7, 2016), *available at* <https://2009-2017.state.gov/s/1/releases/remarks/264963.htm> [<https://perma.cc/WX4F-KGK3>].

¹¹⁶ LEE, *supra* note 115, at 182.

¹¹⁷ *Id.* at 199.

outer space belongs to all of mankind, all natural resources available also belong to all of mankind.”¹¹⁸

This is not the view of the United States. In 1979, Secretary of State Cyrus Vance reflected the longstanding U.S. interpretation when he explained to the Senate Foreign Relations Committee that the non-appropriation principle applies only to resources “in place” and does not prevent ownership over resources which have been removed from their place on or below the surface of a celestial body.¹¹⁹ Decades later, as advances in technology made a space resource mining industry increasingly plausible, Congress sought to create a pro-industry legal environment for potential investors. In 2015, the United States passed the Commercial Space Launch Competitiveness Act, Title IV of which was called the Space Resource Exploration and Utilization Act (the Act).¹²⁰

The Act recognizes the right of citizens to assert private property interests in space resources “in manners consistent with the international obligations of the United States.”¹²¹ In doing so, the Act proclaims it “does not thereby assert sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body.”¹²² In effect, this provision states the United States’ interpretation of the rights of Article I and the bounds of Article II: the Outer Space Treaty prohibits assertions of sovereignty over celestial bodies, but does not prohibit asserting property rights in the resources on celestial bodies once removed. Through the Act, Congress has, in effect, declared the U.S. interpretation to be legitimate under international law.

Given that there is no accepted international interpretation on this matter, the Act may be seen “as legislation that represents a step towards defining the content of Article II and the

¹¹⁸ von der Dunk, *supra* note 115, at 91. This argument is derived from Article I of the Outer Space Treaty, which holds that the exploration and use of outer space “shall be the province of all mankind.” Outer Space Treaty, *supra* note 14, art. I.

¹¹⁹ See Egan, *supra* note 115 (describing *Hearings on Agreement Governing the Activities of States on the Moon and Other Celestial Bodies Before the S. Comm. on Commerce, Sci. and Transp.*, 96th Cong. 312–13 (1980) (letter from Secretary of State Vance to Senator Frank Church, from Nov. 28, 1979)).

¹²⁰ U.S. Commercial Space Launch Competitiveness Act, Pub. L. No. 114-90, §§ 401–403, 129 Stat. 704, 720–22 (2015) (codified at 51 U.S.C. § 51301–03).

¹²¹ *Id.* § 402.

¹²² *Id.* § 403.

law concerning the specific activity of space mining.”¹²³ The test is whether the other States embrace this step and, ultimately, establish something approximating an international consensus. Luxembourg quickly provided the next step, enacting a law in 2017 declaring that space resources are capable of being appropriated.¹²⁴ The United Arab Emirates is also preparing to establish domestic laws that would allow private companies to retain ownership of resources mined in space.¹²⁵ Due to U.S. and private sector outreach, “[a] number of close allies that previously held no opinion about the [U.S.] law, including Australia, Canada, New Zealand, and the United Kingdom, are now considering their own space resources policies.”¹²⁶ China, too, has reportedly dropped its initial opposition to the U.S. law, in part because China also has plans for space resource utilization.¹²⁷

Going forward, the United States must continue establishing a pattern of clear state practice in furtherance of its application of the Outer Space Treaty to resource mining on celestial bodies. However, in doing so the United States must also be cognizant that other States continue to have misgivings about this approach. For example, the Belgian delegation to COPUOS recently lamented:

In the last decades, a lot of efforts have been devoted towards adopting an interpretation of the United Nations space law treaties that would, above all, advance national—and sometimes individual—objectives or interests. Belgium fears that this evolution, bolstered by national legislation in the face of a growing deadlock at intergovernmental forums, may result in growing misun-

¹²³ P.J. Blount & Christian J. Robison, *One Small Step: The Impact of the U.S. Commercial Space Launch Competitiveness Act of 2015 on the Exploitation of Resources in Outer Space*, 18 N.C. J.L. & TECH. 160, 182 (2016).

¹²⁴ CODE CIVIL Loi du 20 Juillet 2017 sur L’exploration et L’utilisation des Ressources de L’espace, art. I (Lux.) (“Les ressources de l’espace sont susceptibles d’appropriation.”), available at <http://legilux.public.lu/eli/etat/leg/loi/2017/07/20/a674/jo> [<https://perma.cc/SP8R-Y3N5>].

¹²⁵ Kelsey Warner, *UAE Looks to Regulate Asteroid Mining as It Aims to Lure Private Space Sector*, THE NATIONAL (Nov. 26, 2019), <https://www.thenational.ae/uae/science/uae-looks-to-regulate-asteroid-mining-as-it-aims-to-lure-private-space-sector-1.943028> [<https://perma.cc/NCR7-UPLU>]. According to the UAE Space Agency, it is “[s]imilar to the principle of the law of the sea in international waters where no state can claim sovereignty over the sea but commercial fishing operations can own and sell what they obtain.” *Id.*

¹²⁶ Jeff Foust, *Lunar Exploration Providing New Impetus for Space Resources Legal Debate*, SPACE NEWS (Sept. 7, 2019), <https://spacenews.com/lunar-exploration-providing-new-impetus-for-space-resources-legal-debate/> [<https://perma.cc/57ZY-2R33>].

¹²⁷ *Id.*

derstandings and ambiguities that would increase, rather than mitigate, the potential for conflict.¹²⁸

Belgium concludes that a “reasonable interpretation” of the Outer Space Treaty “should lead to the finding that international norms are the most suitable approach” for a space resource mining legal framework, and that “competent bodies”—like COPUOS—should elaborate such norms.¹²⁹ Thus, a shared recognition of the possibility for property rights in space resources, if achieved, would only be the first step; international cooperation will be necessary to address the numerous issues that will remain.¹³⁰

V. CONCLUSIONS

As of this writing, Senator Ted Cruz’s proposed Space Frontiers Act of 2019 is pending before the Senate Committee on Commerce, Science, and Transportation.¹³¹ Section 305 of the proposed bill says “[i]t is the sense of Congress that . . . existing guidelines for the mitigation of orbital debris may not be adequate to ensure long-term usability of the space environment for all users” and “the United States should continue to exercise a leadership role in developing orbital debris prevention standards that may be used by all space-faring nations.”¹³² As the foregoing demonstrates, one way the United States can lead is through establishing a State practice of interpreting the due regard principle as a meaningful tool for dealing with orbital debris. If the United States were to pursue this course, what considerations follow? Three come to mind.

¹²⁸ UNCOPUOS Legal Subcommittee, Contribution from Belgium to the Discussion on Item “General Exchange of Views on Potential Legal Models for Activities in Exploration, Exploitation and Utilization of Space Resources”, U.N. Doc. A/AC.105/C.2/2017/CRP.19. (Mar. 28, 2017), *available at* https://www.unoosa.org/res/oosadoc/data/documents/2017/aac_105c_22017crp/aac_105c_22017crp_19_0_html/AC105_C2_2017_CRP19E.pdf [<https://perma.cc/HY4E-Z6C7>].

¹²⁹ *Id.*

¹³⁰ Two such issues, as raised by Belgium, are (1) How any right of use of celestial bodies’ mineral resources could be granted without allowing that entity to claim exclusive access to a dedicated area of the celestial body surface and underground; and (2) How limitations in terms of size and duration of activities associated with such right of use can be determined in a manner that would respect the freedoms of others as stipulated in the fundamental provisions of the Outer Space Treaty. *Id.*

¹³¹ Space Frontier Act of 2019, S. 919, 116th Cong. (1st Sess. 2019).

¹³² *Id.* § 305.

First, it would be necessary to apply a top-down approach. This is the most important lesson from U.S. experience in shaping the meaning of “peaceful purposes” and the non-appropriation principle. Even before the notion of “peaceful purposes” in outer space became international law, President Kennedy directed efforts to shape its meaning on the world stage. A series of subsequent national space policies have reinforced this preferred meaning, which has now become widely accepted. Similarly, Congress passed, and President Obama signed into law, a statement of the U.S. position on space resource mining, advancing State practice in the application of the Outer Space Treaty. As the ILC has concluded, subsequent State practice in the application of a treaty may consist of the exercise of executive and legislative functions, including official statements of a treaty’s meaning.¹³³

Notably, this top-down approach is distinguishable from the pursuit of bottom-up approaches that the United States generally favors for space. Bottom-up norms are “best practice guidelines intended to inform day-to-day operations” in outer space.¹³⁴ They “have received the most attention in recent years because of their potential to enhance space safety and sustainability as the number of space actors grows and the nature of space activities changes.”¹³⁵ Indeed, industry plays an increasingly important role in establishing best-practices in outer space. Bottom-up efforts can play an essential role in normalizing best-practices internationally, and these best-practices can pave the way for new legally binding rules, if desired. However, the bottom-up approach will not suffice as a substitute for establishing State practice in the application of Article IX of the Outer Space Treaty pursuant to Article 32 of the VCLT. Working from the bottom up may be effective for shaping non-legally binding norms or developing domestic law, but it is States, through their practice, that can shape the meaning of international law.

Second, the role of the customary international law on State responsibility must be evaluated. Establishing a functional interpretation of Article IX, which is already binding law on all spacefaring States, would invoke the customary international law of State responsibility in ways that non-binding norms concerning orbital debris would not. A State’s identifiable breach of the

¹³³ ILC Report, *supra* note 59, at 36–37.

¹³⁴ Schaffer, *supra* note 93, at 88.

¹³⁵ *Id.* at 88–89.

due regard principle would constitute an internationally wrongful act that entails the international responsibility of that State.¹³⁶

Responsibility under customary international law entails the obligation to make reparations for any injury resulting from the breach of the international obligation.¹³⁷ This can be advantageous because the imposition of economic consequences can serve as a deterrent and reinforce the transnational legal process, which is the process through which existing or revised norms become internalized through interactions among States and non-governmental actors.¹³⁸ In addition, due to Article VI of the Outer Space Treaty which directly imputes to States responsibility for non-governmental actors, economic consequences can give States an added incentive to regulate responsible behavior.¹³⁹ Some may argue that binding law is disadvantageous because it restricts freedom of action in ways that nonbinding guidelines do not, but these concerns can be easily overstated. In fact, the general international law of State responsibility recognizes numerous circumstances precluding wrongfulness, including self-defense, force majeure, and necessity.¹⁴⁰

Third and finally, the problem of resolving disputes must be addressed. Because of the reciprocal nature of the due regard principle, challenges between legitimate activities are usually resolved through consultations, as the *Chagos* Award observed in the context of the law of the sea.¹⁴¹ Unlike the law of the sea, however, space law has no comparable arbitral regime to resolve disputes when agreement cannot be reached. Both the United States and the Soviet Union included articles on settlement of disputes in their initial proposals for the Outer Space Treaty, but in the end neither pushed for inclusion of a specific provision in the interest of expediting agreement on the Treaty as a whole.¹⁴² Although Article IX contains a consultation mechanism, it is unable to resolve disputes or establish responsibility. Under this mechanism, the act of consulting is, by itself, enough

¹³⁶ Int'l Law Comm'n, Rep. on the Work of Its Fifty-Third Session, at 32, U.N. Doc. A/56/10 (2001) [hereinafter Draft Articles on State Responsibility].

¹³⁷ *Id.* at 91.

¹³⁸ Harold Hongju Koh, *Transnational Legal Process*, 75 NEB. L. REV. 181, 183–84 (1996).

¹³⁹ Outer Space Treaty, *supra* note 14, art. VI.

¹⁴⁰ Draft Articles on State Responsibility, *supra* note 136, at 74–84.

¹⁴¹ *Chagos Marine Protected Area (Mauritius v. U.K.)*, 31 R.I.A.A. 359, ¶ 519 (Perm. Ct. Arb. 2015).

¹⁴² Dembling & Arons, *supra* note 69, at 453.

to meet the obligation, regardless of the consultation's outcome. Recourse to, or compliance with, Article IX's consultation mechanism should not be conflated with adherence to its due regard obligation. They are not the same obligation, which is why it would be important for the United States, in establishing State practice, to disassociate Article IX's due regard principle from Article IX's consultation mechanism.

Resolving disputes and assessing due regard violations will require international cooperation. In this regard, it is similar to the ongoing legal developments in celestial body resource exploitation. In both instances, establishing a common functional understanding of relevant legal provisions through State practice is only a first step. A leadership role for the United States will not be limited to the deliberate, coordinated advancement of State practice, but rather will necessarily extend to advancing the principles of international cooperation and mutual assistance, just as States are compelled to do under Article IX.